

REMARKS

Claims 1, 6-23, and 46-66 are pending in the application, claims 46-66 being newly added herein. Claims 2-5 and 24-45 were previously cancelled. Claims 1 and 46 are the only independent claims.

Claims Rejections - 35 U.S.C. § 112

Claims 1 and 6-23 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Examiner specifically maintains that the phrase “substantially narrower” in claim 1 is a relative term that renders the claim indefinite.

Claim 1 is amended herein to eliminate the phrase “substantially narrower” thereby overcoming the rejection of the claims under 35 U.S.C. § 112, second paragraph.

Claims Rejections - 35 U.S.C. §§ 102 and 103

Claims 1 and 6-23 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,115,494 to Valyi in view of U.S. Patent No. 4,143,453 to Taluba and further in view of U.S. Patent No. 6,403,603 to Fekete et al., U.S. Patent No. 6,733,716 to Belcher, and 2,702,411 to Winstead.

Claim 1 Claim 1 is amended herein to more clearly identify a feature of applicant’s invention that distinguishes the invention over the prior art as represented by the references cited by the Examiner in the rejection of the claims. Applicant respectfully requests reconsideration of claim 1 in view of the amendment and the remarks below.

As set forth in amended claim 1, a process for making a deformable, hollow thermoplastic doll head comprises (a) providing an injection moldable flexible

thermoplastic elastomer and (b) providing a first mold, the mold comprising exterior mold front and rear sections and an interior core which extends vertically through the first mold, the first mold comprising a parison injection station, wherein the exterior sections of the first mold are spaced apart from the interior core to define a first mold cavity in the shape of a substantial portion of the doll head *including the whole face from forehead to neck*. The process additionally comprises (c) assembling the exterior mold sections of the first mold thereby forming a planar junction between the exterior mold parts, (d) injecting the elastomer into the first mold cavity to form a parison, (e) opening the exterior mold parts of the first mold and transferring the rear section of the first mold and the parison to a blow station, and (f) providing a second mold at the blow station. The second mold comprises an exterior mold front section, the rear section of the first mold, and an interior core, wherein the exterior mold front section of the second mold and the rear section of the first mold exterior sections are oriented latitudinally relative to one another and wherein the exterior sections of the second mold are spaced apart from the interior core of the second mold to define a cavity in the shape of the entirety of the hollow doll head. The process of claim 1 further comprises (g) drawing a vacuum on, and injecting compressed gas into, the second mold, thereby dispersing the parison relatively evenly, and with a substantially uniform thickness, against the second mold cavity interior surface to form the hollow doll head, the hollow doll head having an opening for removing the interior core. The process also comprises (h) cooling the dispersed parison, thereby causing it to set and form the hollow doll head and (i) separating the second mold interior core from the hollow doll head. In the method of claim 1, the second mold cavity vacuum pressure ranges from about -7 psig to about

-14.5 psig, the pressure of the compressed gas injected into the second mold ranges from about 80 psig to about 1,000 psig, the parison injection station temperature is from about 150°C to less than about 300°C, the temperature of the compressed gas injected into the second mold ranges from about 30°C to about 40°C, a vacuum is drawn upon the first mold cavity for about three to about ten seconds prior to the end of the elastomer injection period, the elastomer is injected into the first mold cavity over a period of from about 0.2 to about 6 seconds and the cooled and dispersed parison sets within the second mold in about 5 seconds to about 90 seconds. The doll head has a hair line which forms a substantially continuous circle extending around the top of the doll head, and the first mold cavity is in the shape of a portion of the hollow doll head below the hair line. Pursuant to an amendment to claim 1 made herein, the *rear section of the first mold defines facial features of the hollow doll head.*

Applicant's invention as set forth in claim 1 contemplates that the final features of the doll head are formed in part by injection molding and in part by blow molding. More particularly, the fine features of the doll's face are formed by injection molding, whereas the top of the head is formed by blow molding. Thus, the rear section of the first mold is formed on an interior cavity-defining surface with facial details of the doll head. The facial details are formed during the parison molding process. The top of the doll head is subsequently formed by blow molding against the exterior mold front section of the second mold.

The present invention makes use of injection molding pressure to mold the final details of the head within the first mold (#5 in the drawings) and use blow molding to expand and thin up the top part where the surface is mainly smooth and has no detailed

structure. The present invention combines the advantage of both injection molding for the detailed facial features and blow molding for the thin upper portion of the doll head.

Valyi, the primary reference relied on by the Examiner in rejecting claim 1, discloses a two stage molding process wherein a parison (16) is formed by injection molding during the first stage and is blow molded during a second stage to assume a final form. The final shape of the article formed by the method of Valyi is completely determined by the interior of the blow mold cavity used during the second stage of the process.

In the method of Valyi, the parison (16) is formed on a platen (20) during the injection molding stage and rests on the platen during transformation of the parison into the blow-molded object during the second stage of the process. Valyi contemplates that the entire shape of the thermoplastic article (with the possible exception of a neck held by a neck mold (21) is determined during the blow molding process by the shape of the mold cavity, the pressure exerted, and the characteristics of the thermoplastic material.

Nothing in the secondary references suggests that the final form of a doll head could be determined in part by injection molding and in part by blow molding.

The method of Belcher involves making a hollow blow molded thermoplastic article having an integral handle. An unblown preform of polyethylene terephthalate (PET) is inserted into a blow mold and thereafter stretched by a stretch rod. Blow gas is then injected into the interior of the preform when the blow mold is closed and the preform is at a stretch temperature. After the preform is blown into the shape of the bottle in the mold, blow gas is discharged from the stretch rod onto an interior wall surface where the handle is to be formed. Movable mold segments are then advanced within the

blow mold from a first retracted position to a second position thereby compressing an interior wall surface of the article into contact with a facing interior wall surface of the bottle to bond the surfaces at an elevated temperature and form an integral handle extending from the exterior wall of the blow molded article.

It is clearly that Belcher's patent is specifically for making a stretch/blow molded article (bottle) with an integral projection such as a handle. Belcher's method modifies a traditional blow molding process to include a movable segment in the mold to form the handle. Nothing in Belcher suggests that the final form of a doll head could be determined in part by injection molding and in part by blow molding.

Taluba discloses a manufacturing method wherein a hollow doll head is formed of elastomer material and is blow molded to include a downwardly extended annular lip having a semicircular groove at the front of the neck. The lip is constructed to fold inwardly and to engage a bead or flange on the neck portion of the body, thereby securing the head to the body.

Taluba's patent is clearly directed to blow molding a doll head in an elastomer material with a traditional blow molding technique to provide a downwardly extended annular lip having a semicircular groove at the front of the neck. The blow mold method is similar to the one described in Belcher's patent in which a parison and a split blow mold is used, with split line along the side of the head. Nothing in Belcher suggests that the final form of a doll head could be determined in part by injection molding and in part by blow molding.

Fekete et al. provide a method for making a hollow doll head by injection molding a thermoplastic elastomer around a removable mold core. The major dimension

of the mold core is larger than the opening in the doll's head through which the core is to be removed after the injection molding is complete. For large mold cores and relatively small openings, Fekete et al. provide a multiple piece core section which is designed to be removed piece by piece through the opening in the doll's head and then reassembled for reuse.

Fekete et al. teach an injection molding method for forming a doll's head with finished detail about the entirety thereof. Nothing in the Fekete reference suggests that the final form of a doll head could be determined in part by injection molding and in part by blow molding.

Claim 46 New independent claim 46 is submitted herein to provide a less restricted definition of the invention and yet describe the essential characteristic of injection molding facial features and blow molding another part of a doll head.

Pursuant to new independent claim 46, a process for making a deformable, hollow thermoplastic doll head comprises (a) providing an injection moldable flexible thermoplastic elastomer and (b) providing a primary mold including an exterior first mold section and an exterior second mold section and further including an interior core extending vertically through the primary mold, the exterior sections of the primary mold being spaced from the interior core at an injection station to define a first mold cavity in the shape of a substantial portion of the doll head, *the first mold section of the primary mold being formed with details of a face of the doll head*. The method also comprises (c) assembling the exterior mold sections of the primary mold so as to form a planar junction between the exterior mold sections, (d) injecting the elastomer into the first mold cavity of the primary mold at the injection station to form *a parison having facial*

features formed by the first mold section of the primary mold, (e) opening the exterior mold sections of the primary mold and transferring the first mold section together with the parison to a blow station, and (f) providing a secondary mold at the blow station, the secondary mold comprising an exterior third mold section, the first mold section, and the interior core, wherein the third mold section and the first mold section are spaced apart from the interior core to define a second mold cavity in the shape of the entirety of the doll head. The method of claim 46 additionally comprises (g) drawing a vacuum on, and injecting compressed gas into, the secondary mold, at the blow station, thereby dispersing the parison relatively evenly, and with a substantially uniform thickness, against an interior surface of the second mold cavity to form a molded hollow doll head, the hollow doll head having an opening for removing the interior core, (h) cooling the dispersed parison, thereby causing it to set in the form of the hollow doll head, (i) separating the interior core from the hollow doll head, and (j) removing the hollow doll head from the first mold section, the *facial features of the doll head having been formed against the first mold section during the injecting the elastomer into the first mold cavity*.

As discussed hereinabove with reference to claim 1, the references either teach blow molding an article wherein the features of the finished molded part are determined solely by the blow molding process (Valyi, Belcher, Taluba) or injection molding an article wherein the features of the finished molded part are determined solely by the injection molding process (Fekete). Nothing in the references suggests that a molded product such as a doll head could have some final features determined by injection and other features of the molded product determined by blow molding.

The claim amendments, if any, made herein are made without prejudice to applicants' right to pursue additional subject matter in a separate continuation or divisional application.

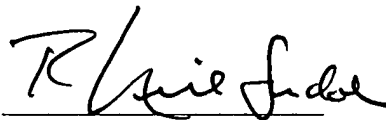
Conclusion

For the foregoing reasons, independent claims 1 and 46, as well as the claims dependent therefrom, are deemed to be in condition for allowance. An early Notice to that effect is earnestly solicited.

Should the Examiner believe that direct contact with applicant's attorney would advance the prosecution of this application, the Examiner is invited to telephone the undersigned at the number below.

Respectfully submitted,

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Dated: February 28, 2006